

REMARKS

The present amendment is in response to the Final Action where the Examiner has rejected claims 1, 2 and 4-19, which includes two (2) independent claims 1 and 19. By the present amendment and RCE, claims 1, 2, 4-17 are amended, claims (3), 18 and 19 are canceled, and new claim 20 is added.

A. Claim Rejections under 35 USC 103(a)

The Examiner rejects all of the pending claims as being unpatentable over Simmons (US3676803) in view of Nakamichi (EP0909024A2) and Makino (US5945887). In response, Applicant amends the claims to more precisely claim an embodiment of the invention as illustrated in Figure 5 of the specification.

Specifically, the Simmons patent discloses matching circuits A, B and C for circulator (See e.g., Figure 2). Makino is cited as a reference that teaches an isolator, a matching circuit and an amplifier on the same substrate. Finally, Nakamichi is cited as a reference that teaches an impedance matching device that uses voltage tunable capacitors that may be ferro-electric. However, these devices do not teach or suggest the embodiments of Applicant's inventions as claimed in independent claims 1 and 20.

Specifically, Figures 1 and 3 of Nakamichi disclose an impedance matching device that is inserted between an input terminal 2 and an earth terminal (ground) 13. Thus, if Nakamichi is combined with Simmons, the Nakamichi impedance matching device would be substituted for the matching circuit of Fig. 2 of Simmons that connects the signal path to ground. Note that in Figure 2 of Simmons, there are no components in the signal path from, e.g., the unmarked input port to "Port a" of the isolator. In contrast, referring to Applicant's Figure 5, the signal path between input 97 and the isolator input, and between the isolator output and the output signal path 107 comprises tunable ferro-electric components 99 and 103 in addition to the tunable components 101 and 105 between the signal path and ground. These tunable ferro-electric

components 99 and 103 are not taught or suggested in the prior art. Thus, Applicant has amended the independent claims 1 (and new claim 20) to comprise at least one of these tunable ferro-electric components in the signal path.

Specifically, claim 1 claims, among other things, "an input matching circuit having a first signal port coupled to the input port of the isolator and a second signal port coupled to an electrical component, the input matching circuit comprising: a signal path from the first signal port to the second signal port; and a first ferro-electric tunable component coupled between the first signal port and the second signal port along the signal path." Since the cited references do not teach or suggest such a circuit configuration using a tunable ferro-electric component, Applicant respectfully asserts that claim 1, and the claims dependent thereupon are patentable over the cited prior art.

B. Conclusion

Applicant asserts that claims 1, 2, 4-17 and 20 are patentable over the cited art under 35 U.S.C. 103(a) as discussed above. Thus, Applicant respectfully requests that the Examiner issue a notice of allowance for all of the now pending claims.

Should the Examiner believe that prosecution of this application might be expedited by further discussion of the issues, he is invited to telephone the attorney for Applicant at the telephone number listed below.

Respectfully submitted,

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